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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/863,419	05/24/2001	William D. Norcott	50277-1005	9399

7590 09/12/2003
DITTHAVONG & CARLSON, P.C.
10507 Braddock Rd Suite A
Fairfax, VA 22032

EXAMINER

ALI, MOHAMMAD

ART UNIT	PAPER NUMBER
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2177

DATE MAILED: 09/12/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/863,419

Applicant(s)

NORCOTT, WILLIAM D.

Examiner

Mohammad Ali

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

DETAILED ACTION

1. The application has been examined. Claims 1-10 are pending in this Office Action.

Drawings

2. Drawings is approved by the Draftperson under 37 CFR 1.84 or 1.152, see attached Form PTO-948

Specification

3. (b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.

In specification, for the cross references in steps 01, 02, 26, 27, and 38 in the blank space U.S. Patent Application Serial N0. is required.

In specification page 4, in step 10, line 5, the word abbreviation "DML" have been used. Proper expansion is required.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-4 and 6 are rejected under 35 U.S.C. 102(b) as being anticipate by William D. Norcott ('Norcott' hereinafter), US Patent 5,848,405.

With respect to claim 1,

Norcott teaches a method for change data capture (see col. 1, lines 64 to col. 2, line 1), comprising the steps of:

extracting change data from a recovery log (new data for refresh processing purposes, the server process deletes [extract] the ROWID range from the ROWID range table. Updates a redo log to indicate the changes made to the range table ensures that identification of the new data can be recovered in the event of database crash, see col. 6, lines 29-31 and col. 5, lines 59-61, Norcott); and

storing the change data from the recovery log in a database object (the start and end ROWID values are database objects and stored in step 406, see col. 5, lines 58-66, Fig. 4, Norcott), said change data indicating at least one modification that has been performed to a source object (updates a redo log to indicate the changes made to the range table, see col. 5, lines 59-60, Norcott).

As to claim 2,

Norcott teaches wherein the database object includes a change table (the server process updates a redo log to indicate the changes made to the range table, see col. 5, lines 54-55, Norcott).

As to claim 3,

Norcott teaches renaming a source column into a change column (the server process updates a redo log to indicate the changes made to the range table. Since table has been changed columns and rows automatically changed, see col. 5, lines 54-55 and col. 7, lines 3-6, Norcott).

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As to claim 4,

Norcott teaches wherein the steps of extracting and storing the change data (see col. 6, lines 29-31 and col. 5, lines 59-61, Norcott) includes the steps of:

generating a database statement to extract the change data from the recovery log and to store the change data in the database object (If the new data records are stored entirely within a single group of data records having a contiguous sequence of ROWIDs, then the summary refresh process is completed after the server process deletes [extract] the ROWID range from the ROWID range table, see col. 6, lines 27-32 and lines 50-58, Norcott); and

executing the database statement in a transaction (After all the new records have been added to the "sales" table it is possible to identify the new records by using the ROWID range table, for example by processing the SQL select statement:

```
SELECT*FROM sales
```

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WHERE (ROWID>=X) AND (ROWID<=Y), see col. 6, lines 50-58, Norcott).
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As to claim 6,

Norcott teaches a computer-readable medium bearing instructions for change data capture, said instructions arranged, when executed, to cause one or more processors to perform the steps of a method (queries are processed by computer system 100 in response to processor 102 executing sequences of instructions contained in memory 104 and the instructions can read into memory 104 from another computer-readable medium, such as data storage device. Execution of the sequences

of instructions contained in memory 104 causes processor 102 to perform the process, see col. 3, lines 20-28, Norcott).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over William D. Norcott ('Norcott' hereinafter), US Patent 5,848,405 as applied to claims 1-4, and 6 above in view of Robert D. Goldring ('Goldring' hereinafter), US Patent 6,438,538 B1.

As to claim 5,

Norcott teaches shipping the recovery log from an on-line transaction processing (OLTP) system (The source of the data is an online transaction processing (OLTP) database and OLTP databases provide a mechanism for exporting [shipping] data from the database into a static file, see col. 4, lines 20-25, Norcott).

Norcott does not explicitly indicate the claimed "staging system".

Goldring discloses claimed staging system (The Capture component captures changes made to data in tables defined as replication sources by reading the database transaction log or journal, without making any changes to the sources, and is performed asynchronously to business applications using the same replication sources. The

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captured changes are placed in staging tables, with transaction detail stored in separately in a unit of work table, see col. 3, lines 11-17, Goldring).

It would have been obvious to one ordinary skill in the data processing art, at the time of the present invention, to combine the teachings of the cited references because the staging system of Goldring's teachings would have allowed to Norcott's system to optimize a query to retrieve data from a dynamically increasing relational database storage as suggested by Goldring, see col. 4, lines 18-20. Staging system as taught by Goldring improves to perform aggregation operation includes initialization the base table by executing the query against the relational database (see col. 4, lines 36-41, Goldring).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over William D. Norcott ('Norcott' hereinafter), US Patent 5,848,405 in view of Robert D. Goldring ('Goldring' hereinafter), US Patent 6,438,538 B1.

With respect to claim 7,

Norcott teaches a method of change data capture (see col. 1, lines 64 to col. 2, line 1), comprising the steps of:

shipping a recovery log (Updates a redo log to indicate the changes made to the range table ensures that identification of the new data can be recovered in the event of database crash, see col. 5, lines 59-61, Norcott) from an on-line transaction processing (OLTP) system (The source of the data is an online transaction processing (OLTP) database and OLTP databases provide a mechanism for exporting [shipping] data from the database into a static file, see col. 4, lines 20-25, Norcott); and

Norcott teaches performing the steps (see col. 5, lines 59-61) of:

extracting change data from a recovery log (new data for refresh processing purposes, the server process deletes [extract] the ROWID range from the ROWID range table. Updates a redo log to indicate the changes made to the range table ensures that identification of the new data can be recovered in the event of database crash, see col. 6, lines 29-31 and col. 5, lines 59-61, Norcott); and

storing the change data from the recovery log in a database object (the start and end ROWID values are database objects and stored in step 406, see col. 5, lines 58-66, Fig. 4, Norcott), said change data indicating at least one modification that has been performed to a source object (updates a redo log to indicate the changes made to the range table, see col. 5, lines 59-60, Norcott).

Norcott does not explicitly indicate the claimed "staging system".

Goldring discloses claimed staging system (The Capture component captures changes made to data in tables defined as replication sources by reading the database

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transaction log or journal, without making any changes to the sources, and is performed asynchronously to business applications using the same replication sources. The captured changes are placed in staging tables, with transaction detail stored in separately in a unit of work table, see col. 3, lines 11-17, Goldring).

It would have been obvious to one ordinary skill in the data processing art, at the time of the present invention, to combine the teachings of the cited references because the staging system of Goldring's teachings would have allowed to Norcott's system to optimize a query to retrieve data from a dynamically increasing relational database storage as suggested by Goldring, see col. 4, lines 18-20. Staging system as taught by Goldring improves to perform aggregation operation includes initialization the base table by executing the query against the relational database (see col. 4, lines 36-41, Goldring).

With respect to claim 8,

Norcott teaches a method of change data capture (see col. 1, lines 64 to col. 2, line 1), comprising the steps of:

shipping a recovery log (Updates a redo log to indicate the changes made to the range table ensures that identification of the new data can be recovered in the event of database crash, see col. 5, lines 59-61, Norcott) from an on-line transaction processing (OLTP) system (The source of the data is an online transaction processing (OLTP) database and OLTP databases provide a mechanism for exporting [shipping] data from the database into a static file, see col. 4, lines 20-25); and

Norcott teaches performing (see col. 1, lines 6-8) the steps of:

registering the recovery log with a log viewer (Updates a redo log to indicate the changes made to the range table ensures that identification of the new data can be recovered in the event of database crash, see col. 5, lines 59-61, Norcott);

generating a SQL statement to extract the change data from the recovery log (After all the new records have been added to the "sales" table it is possible to identify the new records by using the ROWID range table, for example by processing the SQL select statement:

```
SELECT*FROM sales  
WHERE (ROWID>=X) AND (ROWID<=Y)
```

The summary refresh process can access the new data by processing such a select statement after obtaining the values of x and y from the ROWID range table, see col. 6, lines 50-58, Norcott); and

executing the SQL statement (see col. 6, lines 50-55, Norcott), thereby extracting the change data from the recovery log via the log viewer (new data for refresh processing purposes, the server process deletes [extract] the ROWID range from the ROWID range table. Updates a redo log to indicate the changes made to the range table ensures that identification of the new data can be recovered in the event of database crash, see col. 6, lines 29-31 and col. 5, lines 59-61, Norcott) and storing the change data from the recovery log in a change table (the start and end ROWID values are database objects and stored in step 406, see col. 5, lines 58-66, Fig. 4, Norcott), said change data indicating at least one modification that has been performed to a

source object (updates a redo log to indicate the changes made to the range table, see col. 5, lines 59-60, Norcott).

Norcott does not explicitly indicate the claimed "staging system".

Goldring discloses claimed staging system (The Capture component captures changes made to data in tables defined as replication sources by reading the database transaction log or journal, without making any changes to the sources, and is performed asynchronously to business applications using the same replication sources. The captured changes are placed in staging tables, with transaction detail stored in separately in a unit of work table, see col. 3, lines 11-17, Goldring).

It would have been obvious to one ordinary skill in the data processing art, at the time of the present invention, to combine the teachings of the cited references because the staging system of Goldring's teachings would have allowed to Norcott's system to optimize a query to retrieve data from a dynamically increasing relational database storage as suggested by Goldring, see col. 4, lines 18-20. Staging system as taught by Goldring improves to perform aggregation operation includes initialization the base table by executing the query against the relational database (see col. 4, lines 36-41, Goldring).

As to claim 9,

Norcott teaches renaming a source column into a change column (the server process updates a redo log to indicate the changes made to the range table. Since table has been changed columns and rows automatically changed, see col. 5, lines 54-55 and col. 7, lines 3-6, Norcott).

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As to claim 10,

Norcott teaches wherein the on-line transaction processing (OLTP) system are provided by different database vendors employing a different, incompatible internal implementation (The source of the data is an online transaction processing (OLTP) database and OLTP databases provide a mechanism for exporting [shipping] data from the database into a static file. The static file then loaded by the server process into the database table and enable the database to processes for update, see col. 4, lines 20-30, Norcott).

Contact Information

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammad Ali whose telephone number is (703) 605-4356. The examiner can normally be reached on Monday to Thursday from 7:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached on (703) 305-9790 or Customer Service (703) 306-5631. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9600.


Mohammad Ali

Patent Examiner

AU 2177

MA

September 04, 2003